UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,546	12/02/2004	Han Leng Paxton Tan	SG02 0011 US	5711

65913 7590 02/22/2010

NXP, B.V.
NXP INTELLECTUAL PROPERTY & LICENSING
M/S41-SJ
1109 MCKAY DRIVE
SAN JOSE, CA 95131

EXAMINER	
HU, RUI MENG	

ART UNIT	PAPER NUMBER
2618	

NOTIFICATION DATE	DELIVERY MODE
02/22/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/516,546
Filing Date: December 02, 2004
Appellant(s): TAN, HAN LENG PAXTON

Robert J. Crawford
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 12/08/2009 appealing from the Office action mailed on 07/08/2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

After further consideration, claims 1, 2 and 4-7 are allowed.

Claim 3 is rejected.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,125,105	Kennedy et al.	6-1992

5,870,666	Tanaka et al.	2-1999
4,903,328	Ichikawa	2-1990
6,957,053	Moers	10-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites "*counting means for registering,* within an interval immediately after receiving said FM signal, *a number of times* within a predetermined number of times that said FM signal meets both of the criteria", according to the specification paragraph 0013 and the sole figure, counting means may have 0 or 1 count that said FM signal meets both of the criteria, it is clear that 0 or 1 count is not in line with "a number of times", thus the limitation is uncertain.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kennedy et al. (US Patent 5125105)** in view of **Tanaka et al. (US Patent 5870666), Ichikawa (US Patent 4903328) and Moers (US Patent 6957053).**

Consider **claim 3**, Kennedy et al. disclose an auto tuning device (abstract, column 2 line 61-column 3 line 21, column 4 lines 9-27, column 5 lines 14-22, figures 3 and 4) comprising: means for registering whether or not a FM signal, received in a radio FM receiver (the FM signal is accepted only if all the criteria 31, 32 and 33 are met), meets criteria for identifying the FM signal as being of a predetermined quality and being within an automatic frequency control window associated with a valid FM station (column 4 lines 9-27), wherein the received FM signal is tested once in each of the criteria 31, 32 and 33, and accepting the received FM signal only if all the criteria 31, 32 and 33 are met (column 4 lines 9-27, column 5 lines 14-22, figures 3 and 4).

However Kennedy et al. fail to disclose counting means for registering within an interval immediately after receiving said FM signal, a number of times within a

predetermined number of times that said FM signal meets the criteria, and means for storing information denoting a frequency of the FM signal only if the criteria are met a majority of the predetermined number of times.

In the same field of endeavor, Tanaka et al. disclose a RF signal quality determination circuit, wherein RSSI of a received RF signal is continuously measured a predetermined M times, and the received signal is qualified in RSSI Estimation stage only if the criterion RSSI is met a majority of the times (column 3 line 63-column 4 line 12, figure 2, the test is repeated M (a predetermined integer) times, passed the test a majority of the times as F<0).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Tanaka et al. into the art of Kennedy et al. as to measure the received FM signal a predetermined M times and accepting the signal only if all the criteria 31, 32 and 33 are met a majority of the times for better assurance.

However Kennedy et al. fail to disclose measuring a predetermined number of times of the FM signal is in the AFC window.

In the same field of endeavor, Ichikawa disclose a FM receiver, for automatically selecting a valid channel comprising incrementing a count when the FM signal is in the AFC window (column 2 lines 11-19, testing a received channel three times, if at least two of three counting operations are in the AFC window (column 1 lines 65-68), it is then judged that the broadcasting signal is present).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Ichikawa into the art of Kennedy et al. as to measure the received FM signal a predetermined M times and accepting the signal only if all the criteria 31, 32 and 33 are met a majority of the times for better assurance.

However, Kennedy et al. fail to disclose storing information denoting a frequency of the FM signal. This teaching is well known in the art.

In the same field of endeavor, Moers discloses a method of auto-tuning a radio FM-receiver (abstract) by scanning the receiver frequency band (column 4 lines 23-41) until a FM signal is received meeting criteria (column 4 line 66-column 5 line 5) for identifying the signal as being of a predetermined quality (predetermined threshold level qt), particularly coming from a valid FM station (column 4 lines 23-41), and storing information denoting a frequency of the FM signal (figure 3 step a11, column 4 lines 23-41).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Moers into the art of Kennedy et al. as to store the qualified FM channel for faster tuning in the future.

(10) Response to Argument

Regarding claim 1, the applied prior art references fail to clearly mention “when the signal strength of the FM signal is greater than the FM threshold, checking whether

the FM signal is in the AFC window, and incrementing a count when the FM signal is in the AFC window; repeating the testing step a predetermined number of times", thus claims 1, 2 and 4-7 are allowed, and Appellant's arguments regarding these claims are moot.

Regarding claim 3, Appellant argued that the applied references fail to disclose checking FM signal strength and AFC window criteria and responsively incrementing a count as a whole; the Examiner failed to provide a valid reason for combining the applied references; further the combination is based on an improper hindsight reconstruction of the claimed invention.

The Examiner respectfully submits that the present invention is directed to a FM radio receiver which scans the FM frequency band e.g. 87.5-108.5 MHz, when a FM signal is detected during scanning the FM signal is tested with the criteria (i.e. signal strength and AFC window) a predetermined number of times, and the frequency/station of this FM signal is considered valid (e.g. from a valid broadcasting station) and stored if a majority of the predetermined number of times the FM signal met the criteria.

Kennedy et al. clearly disclose (Abstract, figures 3 and 4, column 4 lines 9-54) a FM radio receiver scans the FM frequency band for a FM signal, the detected FM signal is tested in detector 48 (figure 4) to determine whether or not the FM signal meets the criteria (i.e. signal intensity (signal strength) and AFC window), a similar signal quality determination is also disclosed by Kennedy et al. in figure 1, column 3 lines 6-21, when the FM signal meets both criteria (i.e. signal intensity (signal strength) and AFC window) the FM radio receiver plays audio through stereo 16 and 18 (figure 1).

However Kennedy et al. fail to disclose to test the detected FM signal a predetermined number of times, the frequency/station of this FM signal is stored if a majority of the predetermined number of times the FM signal met the criteria.

In the same field of endeavor, Tanaka et al. clearly disclose (Abstract) a wireless RF (Radio Frequency) receiver comprising a RF signal quality determination circuit, wherein the RSSI (signal strength) of a received RF signal is continuously measured a predetermined M times, and the received RF signal is qualified in the RSSI Estimation stage only if the criterion RSSI is met a majority of the M times (column 3 line 63-column 4 line 12, figure 2, the test is repeated M (a predetermined integer) times, passed the test a majority of the times as F<0).

In the same field of endeavor, Ichikawa clearly disclose (Abstract) a FM radio receiver, for automatically selecting a valid channel comprising incrementing a count when the FM signal is in the AFC window, and the channel of the FM signal is considered valid and selected if a majority of a predetermined number of times the FM signal met the AFC window criterion (column 2 lines 11-19, testing a received channel three times, if at least two of three counting operations are in the AFC window (column 1 lines 65-68), it is then judged that the broadcasting signal is present).

Since Tanaka et al. clearly teach and suggest for a reliable channel estimation, the received RF signal is tested with the RSSI criterion a predetermined number of times, and the received RF signal is considered passed the test only if the received RF signal met the RSSI criterion a majority times of the predetermined number of times, and Ichikawa clearly teaches and suggests for a precise judgment, the detected FM

signal is tested with the AFC window criterion 3 times, and the detected FM signal is considered a valid broadcasting signal only if the detected FM signal met the AFC window criterion 2 of the 3 times, therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Tanaka et al. and Ichikawa into the art of Kennedy et al. as to measure the detected FM signal with the signal intensity/strength and the AFC window criteria in figure 1 or 4 of Kennedy et al. a predetermined number of times and accepting the detected FM signal only if a majority of the predetermined number of times the detected FM signal met the criteria (e.g. 2 out of 3 times as suggested by Ichikawa) for increasing the assurance, reliability and precision of the channel determination. One ordinary skilled in the art at the time the invention was made will easily realize that testing the detected FM signal (in figure 1 or figure 4 of Kennedy et al.) with the criteria (signal intensity and AFC window) a predetermined number of times (e.g. 3 times as suggested by Ichikawa) will greatly improve/increase assurance of that the detected FM signal coming from a valid broadcasting station.

Kennedy et al. fail to mention storing information denoting a frequency of the FM signal. This teaching is well known in the art.

In the same field of endeavor, Moers discloses a FM radio receiver, and a method of auto-tuning a radio FM-receiver (abstract) by scanning the receiver frequency band (column 4 lines 23-41) until a FM signal is received meeting criteria (column 4 line 66-column 5 line 5) for identifying the signal as being of a predetermined quality (predetermined threshold level qt), particularly coming from a valid FM station (column 4

lines 23-41), and storing the frequency/station of the valid FM signal (figure 3 step a11, column 4 lines 23-41).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Moers into the art of Kennedy et al. as to not only listen to the valid FM channel at the moment but also to store the valid FM channel for faster tuning in the future.

Regarding claim 3, Appellant argued that the 112(2) rejection is improper, The Examiner improperly equates the breadth of claim 3 with indefiniteness.

The Examiner respectfully submits that claim 3 recites “counting means for registering, within an interval immediately after receiving said FM signal, a number of times within a predetermined number of times that said FM signal meets both of the criteria", however according to the specification paragraph 0013 and the sole figure, counting means for registering may result 0 or 1 count that said FM signal meets both of the criteria, it is clear that 0 or 1 count is not in line with "a number of times", counting means is simply for registering that said FM signal meets both of the criteria, and for every time of process, a result of the counting means is predicted to be a value from 0 to the predetermined number of times, that includes 0 and 1, claim 3 firmly states counting means for registering *a number of times* that said FM signal meets both of the criteria, it appears that Appellant assumes that counting means will register a number of times that said FM signal meets both of the criteria, however that is only an assumption,

and the limitation fails to stand when the result is 0 or 1, thus it is an issue of indefiniteness.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/RuiMeng Hu/

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RuiMeng Hu whose telephone number is 571-270-1105. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/RuiMeng Hu/
R.H./rh
February 12, 2010

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618

/Duc Nguyen/

Supervisory Patent Examiner, Art Unit 2618